

Claims

1. A polyacrylamide gel utilising a buffer system comprising
Tris(hydroxymethyl)aminomethane at the concentration range 0.15 to 0.25 M
titrated with hydrochloric acid to a pH between 6.5 and 7.5.
2. The gel according to claim 1 comprising Tris(hydroxymethyl)aminomethane at 0.18
to 0.22 M and having a pH of 6.8 to 7.2.
3. The gel according to claim 2 comprising Tris(hydroxymethyl)aminomethane at
about 0.20 M and having a pH of about 7.0.
4. The gel according to claim 1 having an acceptable shelf-life of at least 6 months
after storage at about 4⁰C, wherein the acceptable shelf-life being determined by the
gel producing a resolving protein separation migration pattern under electrophoresis
conditions.
5. The gel according to claim 4 having an acceptable shelf-life of at least 9 months.
6. The gel according to claim 5 having an acceptable shelf-life of about 12 months.
7. A method of preparing a polyacrylamide gel, the method comprising polymerising
acrylamide in the presence of a cross-linking agent, water, a buffer system for the
polyacrylamide gel and a polymerisation means;
wherein the buffer system comprises Tris(hydroxymethyl)aminomethane at the
concentration range 0.15 to 0.25 M titrated with hydrochloric acid to a pH between
6.5 and 7.5.
8. The method according to claim 7 wherein the cross-linking agent is N,N'-
methylene-bis-acrylamide, and the polymerisation means is selected from redox
systems using ammonium persulfate and N,N,N',N'-tetramethylethylenediamine

(TEMED), photoinitiation systems using riboflavin, or thermal initiation using ammonium persulfate.

9. The method according to claim 8 wherein the buffer system comprises
5 Tris(hydroxymethyl)aminomethane at 0.18 to 0.22 M and having a pH of 6.8 to 7.2.
10. The method according to claim 9 wherein the buffer system comprises
Tris(hydroxymethyl)aminomethane at about 0.20 M and having a pH of about 7.0.
- 10 11. The method according to claim 7 wherein the gel has an acceptable shelf-life of at
least 6 months after storage at about 4⁰C, wherein the acceptable shelf-life being
determined by the gel producing a resolving protein separation migration pattern
under electrophoresis conditions.
- 15 12. The method according to claim 11 wherein the gel has an acceptable shelf-life of at
least 9 months.
13. The method according to claim 12 wherein the gel has an acceptable shelf-life of
about 12 months.
- 20 14. An apparatus for use in gel electrophoresis, the apparatus comprising a
polyacrylamide gel utilising a buffer system comprising
Tris(hydroxymethyl)aminomethane at the concentration range 0.15 to 0.25 M
titrated with hydrochloric acid to a pH between 6.5 and 7.5.
- 25 15. The apparatus according to claim 14 wherein the gel comprises
Tris(hydroxymethyl)aminomethane at 0.18 to 0.22 M and having a pH of 6.8 to 7.2.
16. The apparatus according to claim 15 wherein the gel comprises
30 Tris(hydroxymethyl)aminomethane at about 0.20 M and having a pH of about 7.0.

17. The apparatus according to claim 14 wherein the gel has an acceptable shelf-life of at least 6 months after storage at about 4⁰C, wherein the acceptable shelf-life being determined by the gel producing a resolving protein separation migration pattern under electrophoresis conditions.
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18. The apparatus according to claim 17 wherein the gel has an acceptable shelf-life of at least 9 months.
19. The apparatus according to claim 18 wherein the gel has an acceptable shelf-life of about 12 months.
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20. A method of performing electrophoresis, the method comprising:
- (a) applying a sample containing one or more compounds to be separated to a gel of an electrophoresis apparatus according to claim 14;
 - 15 (b) providing an electrode buffer; and
 - (b) subjecting the gel to an electric field for sufficient time such that at least one compound in the sample is caused to move into the gel.
21. The method according to claim 20 wherein electrode buffer comprises
- 20 Tris(hydroxymethyl) aminomethane and 4-(2-hydroxyethyl)piperazine-1-ethanesulphonic acid (HEPES).
22. The method according to claim 21 wherein the electrode buffer has a concentration of 0.05 to 0.125 M and has a pH of 7.5 to 8.5.
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